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ENVIRONMENTAL CONSULTANTS

November 1, 2013

Ashley Holt, P.G., Manager  
State Remediation Program  
Division of Remediation  
Tennessee Department of Environment and Conservation  
William R. Snodgrass TN Tower  
312 Rosa L. Parks Avenue, 14<sup>th</sup> Floor  
Nashville, Tennessee, 37243

**Re: Seep and Surface Water Monitoring – September 2013  
Solvent Release Response  
Egyptian Lacquer Manufacturing Company  
Franklin, Tennessee  
TriAD Project No. 07-ELM01-01**

Dear Ms. Holt:

As required in the *Modified Seep and Surface Water Monitoring Plan* (Plan), submitted to you on November 14, 2008, TriAD Environmental Consultants, Inc. (TriAD), on behalf of Egyptian Lacquer Manufacturing Company (ELMCO) and through its attorneys Stites and Harbison, PLLC, is submitting the analytical results of the September 2013 monitoring event. This event was performed pursuant to the Plan, as it has been subsequently modified. The first modification changed the monitoring frequency from bi-monthly to quarterly, and was approved by you in an email dated April 15, 2010. The second modification deleted Harpeth River surface-water location HR-DS-LC as a required monitoring point, and was approved by you during a site visit on April 16, 2010. The third modification deleted seep HR-2 as a required monitoring point, as approved in a December 13, 2011, letter from Mr. Chris Lagan. The fourth modification changed the monitoring frequency from quarterly to semi-annually, as approved in a March 22, 2013, email from Chris Lagan. This report of the September 2013 event includes the laboratory reports of the analyses and a table summarizing the current and historical analytical results.

On September 18, 2013, TriAD personnel collected samples from the three monitoring points, all on Liberty Creek, established in the modified Plan: LC-PC, LC-MS, and Watergate. LC-PC and Watergate are surface-water sampling points, and LC-MS is a stream-bank groundwater seep discharge point. This event was performed coincident with the semi-annual groundwater monitoring

event, and during a period in which all locations exhibited flow, the seep location was above the creek level, and the USGS-gauged flow of the Harpeth River at the Highway 96 bridge was approximately 11 cubic feet per second, at a river stage of 3.25 feet. According to data from the Franklin sewage plant posted on the Southern Regional Climate Center website, no rain had been recorded in the area during the previous 4 days. These conditions were drier than those encountered during the previous, March 2013 event.

The sample from LC-MS was not collected at the sample point used since early in the project. Due to low flow and changes in stream morphology, the established sampling point exhibited insufficient flow to enable sample collection, despite efforts to excavate into the accumulated silt along that portion of the stream bank. As a result, the LC-MS sample was collected from approximately 20 feet upstream, where a low volume of water was emerging from the stream bank. As has been noted previously, LC-MS is actually a cluster of seeps in which certain points have been more or less active over the course of the project. The point from which the September 2013 LC-MS sample was collected has been active throughout the project history, but is typically submerged beneath the waters of Liberty Creek and therefore incapable of providing an undiluted sample. Low-flow conditions in September exposed the point, allowing a representative sample to be collected.

All samples were transferred under chain-of-custody procedures to TestAmerica where they were analyzed for volatile organic compounds (VOCs) by U.S. EPA SW846 Method 8260B. The laboratory analytical results are summarized in the attached Table 1. A copy of the complete laboratory report for the September event is also attached, and shows no significant data-quality issues. Minor issues regarding laboratory QA/QC analyses were reported, but these issues did not affect the results. All three samples were diluted during analysis, resulting in higher laboratory reporting limits. No VOCs were detected in the trip blank.

At seep LC-MS, results of the September event showed the concentration of toluene (114 mg/L) increased as compared to recent historical events, although it is still lower than concentrations measured in 2011 and early 2012. Acetone was not detected and has not been detected at this location since 2010, although the detection limit for acetone is often increased due to matrix interference.

The surface-water sample collected from the LC-PC location in September showed a toluene concentration (4.010 mg/L) greater than those recorded Since June 2011, but still significantly lower than most historical results. The average toluene concentration at this location over the last year is 2.84 mg/L. Acetone was not detected in the September sample at a laboratory detection limit of 0.100 mg/L. No other VOCs were reported in the sample, although laboratory detection limits were somewhat elevated due to matrix interference. Fluctuations in the results from this and the Watergate surface water sampling locations are likely caused primarily by changes in Liberty Creek flow volume, but also reflect concentrations in the recharging groundwater represented by results at the LC-MS location.

The September sample from the Watergate location showed toluene at a concentration similar to that measured in recent events, though elevated over the December 2012 and March 2013 events. Acetone was not detected at a laboratory detection limit of 0.050 mg/L. No other VOCs were reported in the sample, although laboratory detection limits were somewhat elevated due to matrix interference.

During the September event, TriAD personnel used a calibrated dissolved-oxygen (DO) meter to measure DO at LC-MS, LC-PC, and Watergate. These measurements were originally performed to provide data potentially useful in evaluating AquAeTer's biostimulant injection effort, which ceased in August 2011, and have since been performed to provide data for historical comparison. The readings collected are as follows:

LC-PC	6.86 mg/L
LC-MS	3.42 mg/L
Watergate	1.57 mg/L

With the exception of the reading at LC-MS, these DO measurements are similar to historical results, with fluctuations in the surface water readings likely due to variation in flow. The reading at LC-MS is higher than typical, and was likely caused by water from the stream mixing with the seep effluent. The low flow of the seep prevented the DO meter from being placed close enough to the seep to avoid such mixing.

The September 2013 monitoring event was the forty-second seep monitoring event, not counting the July 2010 partial, supplemental event or the September 2012 event that resulted in anomalously low readings. In accordance with the approved Plan, the next scheduled event will be in March 2014.

Please contact us if you require additional information.

Sincerely,

**TriAD Environmental Consultants, Inc.**



Chris Scott, P.G.  
Senior Hydrogeologist

Attachments (Table 1, lab report)

cc: Bill Penny, Stites and Harbison  
Kerry Mattox, ELMCO

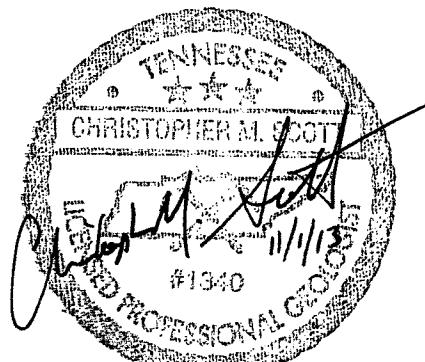


Table 1: Summary of Analytical Results Liberty Creek and Harpeth River Seeps Results in mg/L													
Sampling Location LC-PC (Personnel Crossing)													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloroethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethylbenzene	1,2,3-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
05/18/07	<b>5.1</b>	<b>18</b>	<0.10	<0.10	<0.10	<1.0	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30
05/24/07	<b>18</b>	<b>12<sup>E</sup></b>	<0.050	<0.050	<0.050	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.15
06/01/07	<b>5.1</b>	<b>0.72<sup>E</sup></b>	<0.0010	<0.0010	<0.0010	<b>0.032</b>	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
06/08/07	<b>20</b>	<b>35<sup>J</sup></b>	<0.10	<0.10	<0.10	<1.0	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30
07/09/07	<b>18<sup>E</sup></b>	<b>35<sup>E</sup></b>	<0.050	<0.050	<0.050	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.15
08/08/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/19/07	<b>24</b>	<b>33</b>	<0.20	<0.20	<0.20	<2.0	<2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60
10/15/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/09/07	<12	<b>24</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
12/10/07	<b>3.0</b>	<b>7.8</b>	<0.050	<0.050	<0.050	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.15
01/28/08	<b>1.4</b>	<b>5</b>	<0.025	<0.025	<0.025	<0.25	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075
02/15/08	<b>5.3</b>	<b>8.1</b>	<0.050	<0.050	<0.050	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.15
04/02/08	<b>6.1<sup>E</sup></b>	<b>4.4</b>	<0.0010	<0.0010	<b>0.0019</b>	<b>0.016</b>	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<b>0.010</b>
05/07/08	<b>8.8</b>	<b>6.9<sup>E</sup></b>	<0.025	<0.025	<0.025	<0.25	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075
06/03/08	<b>8.0</b>	<b>13</b>	<0.0050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<b>0.020</b>
07/01/08 <sup>1</sup>	<10	<b>24</b>	<0.20	<0.20	<0.20	<2.0	<2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60
07/01/08 <sup>2</sup>	<b>12.5</b>	<b>26.8</b>	<0.005	<0.005	<b>0.00735</b>	<0.250	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0251</b>
07/01/08 <sup>3</sup>	<b>13.4</b>	<b>30.3</b>	<b>0.00112</b>	<0.00034	<b>0.00704</b>	<b>0.0463</b>	<0.00068	<0.00023	<0.0005	<b>0.00308</b>	NR	<b>0.00212</b>	<b>0.03144</b>
09/09/08 <sup>4</sup>	<b>25.3</b>	<b>38.6<sup>B1</sup></b>	<b>0.00186</b>	<0.0010	<b>0.00617</b>	<b>0.0922</b>	<0.010	<0.0010	<0.0010	<b>0.00308</b>	NR	<0.0010	<b>0.0358</b>
10/01/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/10/08	<b>10.70</b>	<b>25.10</b>	<b>0.00117</b>	<0.0010	<b>0.00892</b>	<b>0.0641</b>	<0.010	<0.0010	<0.0010	<b>0.00237</b>	NR	<0.0010	<b>0.0330</b>
11/13/08	<b>0.691</b>	<b>12.30</b>	<0.0010	<0.0010	<b>0.00330</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00177</b>	NR	<0.0010	<b>0.0169</b>
12/23/08	<b>2.920</b>	<b>7.260</b>	<0.0010	<0.0010	<b>0.00246</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0104</b>

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level NR - Not Reported

Location LC-PC is the same location as that monitored by TDWPC and known as location LC-A.

<sup>1</sup> Environmental Science Corporation

<sup>2</sup> TestAmerica

<sup>3</sup> Tennessee Dept. of Health Environmental Laboratories

<sup>4</sup> Sample also contained 1,2-dichloroethane at 0.00114 mg/L and isopropylbenzene at 0.00156 mg/L

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>J</sup> Matrix interference, spike value is high

<sup>V</sup> The sample concentration is too high to evaluate accurate spike recoveries.

<sup>J6</sup> Matrix Interference, spike value too low

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

**Table 1: Summary of Analytical Results  
Liberty Creek and Harpeth River Seeps  
Results in mg/L**

Sampling Location LC-PC (Personnel Crossing) Cont'd													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
02/06/09	<b>2.570</b>	<b>8.770</b>	<0.0010	<0.0010	<b>0.00318</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0131</b>
04/24/09	<5.0	<b>9.440</b>	<0.0010	<0.0010	<b>0.00322</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0166</b>
06/03/09	<b>4.890</b>	<b>32.700</b>	<b>0.00101</b>	<0.0010	<b>0.0115</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00302</b>	NR	<0.0010	<b>0.0488</b>
08/10/09	<b>0.997</b>	<b>7.650</b>	<0.0010	<0.0010	<b>0.00267</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0153</b>
10/22/09	<5.0 <sup>RL1</sup>	<b>6.970</b>	<0.0010	<0.0010	<b>0.00391</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0195</b>
12/07/09	<b>1.740</b>	<b>10.500</b>	<0.0010	<0.0010	<b>0.00486</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00150</b>	NR	<0.0010	<b>0.0235</b>
02/26/10	<b>0.181</b>	<b>3.170</b>	<0.0010	<0.0010	<b>0.00160</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00699</b>
04/16/10	<b>0.273</b>	<b>9.880</b>	<0.0010	<0.0010	<b>0.00478</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0238</b>
06/18/10	<0.050	<b>3.620</b>	<0.0010	<0.0010	<b>0.00173</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00715</b>
07/27/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/15/10 <sup>RL1</sup>	<1.000	<b>13.800</b>	<0.0200	<0.0200	<0.0200	<1.000	<0.200	<0.0200	<0.0200	<0.0200	NR	<0.0200	<0.0600
12/21/10 <sup>RL1</sup>	<1.000	<b>2.000</b>	<0.0200	<0.0200	<0.0200	<1.000	<0.200	<0.0200	<0.0200	<0.0200	NR	<0.0200	<0.0600
03/22/11 <sup>RL1</sup>	<1.000	<b>2.500</b>	<0.0200	<0.0200	<0.0200	<1.000	<0.200	<0.0200	<0.0200	<0.0200	NR	<0.0200	<0.0600
6/9/2011 <sup>5</sup>	<b>0.0823</b>	<b>7.840</b>	<0.0010	<0.0010	<b>0.00358</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00110</b>	NR	<0.0010	<b>0.0175</b>
9/13/11 <sup>RL1</sup>	<0.500	<b>3.150</b>	<0.010	<0.010	<0.010	<0.500	<0.100	<0.010	<0.010	<0.010	NR	<0.010	<0.030
12/13/11 <sup>RL1</sup>	<0.500	<b>1.960</b>	<0.010	<0.010	<0.010	<0.500	<0.100	<0.010	<0.010	<0.010	NR	<0.010	<0.030
03/22/12	<0.050	<b>1.990</b>	<0.0010	<0.0010	<b>0.00116</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00110</b>	NR	<0.0010	<b>0.00527</b>
7/17/12 <sup>RL1</sup>	<0.250	<b>2.170</b>	<0.0050	<0.0050	<0.0050	<0.250	<0.050	<0.0050	<0.0050	<0.0050	NR	<0.0050	<0.0150
10/5/12 <sup>RL1</sup>	<0.250	<b>1.48 <sup>6</sup></b>	<0.0050	<0.0050	<0.0050	<0.250	<0.050	<0.0050	<0.0050	<0.0050	NR	<0.0050	<0.0150
12/13/12	<b>0.119</b>	<b>0.705</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
03/27/13	<0.050	<b>1.670</b>	<0.0010	<0.0010	<b>0.00106</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00375</b>
9/18/13 <sup>RL1</sup>	<0.100	<b>4.010</b>	<0.020	<0.020	<0.020	<1.000	<0.100	<0.020	<0.020	<0.020	NR	<0.020	<0.040

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level    NR - Not Reported

Location LC-PC is the same location as that monitored by TDWPC and known as location LC-A.

<sup>5</sup> Sample also contained chloroform at 0.00227 mg/L

<sup>6</sup> This result is from resampling. A sample collected on September 6, 2012, contained toluene at a concentration of 0.918 mg/L.

Laboratory qualifiers:

<sup>RL1</sup> Reporting limit raised due to sample matrix effects

Table 1: Summary of Analytical Results Continued Liberty Creek and Harpeth River Seeps Results in mg/L													
Sampling Location LC-MS (Main Seep)													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
5/18/2007 <sup>a</sup>	<12	<b>54<sup>E</sup></b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
5/24/2007 <sup>a</sup>	<12	<b>140</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
06/01/07	<b>51</b>	<b>760<sup>E</sup></b>	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
06/08/07	<50	<b>330</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
07/09/07	<250	<b>340</b>	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<15
08/08/07	<25	<b>640</b>	<b>0.57</b>	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
09/19/07	<10	<b>32</b>	<0.20	<0.20	<0.20	<2.0	<2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60
10/12/07	<120	<b>260</b>	<2.5	<2.5	<2.5	<25	<25	<b>3.2</b>	<2.5	<b>17</b>	<b>3.1</b>	<b>2.9</b>	<7.5
11/09/07	<12	<b>16</b>	<0.25	<b>0.27</b>	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
12/10/07	<1.2	<b>4.1</b>	<0.025	<0.025	<0.025	<0.25	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075
01/28/08	<b>19</b>	<b>74<sup>E</sup></b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
02/15/08	<b>14</b>	<b>38</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
04/02/08	<b>120<sup>E</sup></b>	<b>93</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
05/07/08	<25	<b>100<sup>E</sup></b>	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
06/03/08	<12	<b>120</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
07/01/08 <sup>1</sup>	<12	<b>150</b>	<0.25	<0.25	<0.25	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.75
07/01/08 <sup>2</sup>	<b>10.8</b>	<b>207</b>	<b>0.0103</b>	<0.005	<b>0.0676</b>	<0.250	<0.050	<0.005	<0.005	<b>0.00885</b>	<0.005	<0.005	<b>0.212</b>
07/01/08 <sup>3</sup>	<b>13.7</b>	<b>252</b>	<b>0.00975</b>	<0.00034	<b>0.0671</b>	<b>0.0743</b>	<0.00068	<b>0.00309</b>	<0.0005	<b>0.0158</b>	NR	<b>0.00602</b>	<b>0.2166</b>
09/09/08 <sup>4</sup>	<b>3.53<sup>E</sup></b>	<b>180<sup>B1</sup></b>	<b>0.00831</b>	<0.0010	<b>0.0501</b>	<0.050	<0.010	<b>0.00143</b>	<0.0010	<b>0.0101</b>	NR	<b>0.00325</b>	<b>0.158</b>
09/09/08 <sup>3</sup>	<b>3.910</b>	<b>198</b>	<b>0.00876</b>	<0.0010	<b>0.0540</b>	<b>0.0257</b>	<b>0.0126</b>	<b>0.00149</b>	<0.0010	<b>0.0105</b>	<0.0010	<b>0.00324</b>	<b>0.1646</b>
10/01/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/10/08 <sup>5</sup>	<b>3.190</b>	<b>178.0</b>	<b>0.00745</b>	<0.0010	<b>0.0736</b>	<0.050	<0.010	<b>0.00275</b>	<0.0010	<b>0.0184</b>	NR	<b>0.00578</b>	<b>0.215</b>
11/13/08 <sup>6</sup>	<b>18.300</b>	<b>194.0</b>	<b>0.00911</b>	<0.0010	<b>0.0699</b>	<0.050	<0.010	<b>0.00261</b>	<0.0010	<b>0.0198</b>	NR	<b>0.00636</b>	<b>0.225</b>
12/23/08	<b>8.470</b>	<b>185.0</b>	<b>0.00391</b>	<0.0010	<b>0.0426</b>	<0.050	<0.010	<b>0.00309</b>	<0.0010	<b>0.0099</b>	NR	<b>0.00331</b>	<b>0.149</b>

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level NR - Not Reported

<sup>a</sup> LC-MS samples on 5/18/07 and 5/24/07 were collected from downstream end of boom area; later samples collected from point of seep.

The Liberty Creek - Main Seep is a cluster of seeps, and different seeps within the cluster have been more active than others at different times.

This fact, along with complications from stream flow levels and free-product response efforts, have resulted in variations in the actual LC-MS sampling point.

<sup>1</sup> Environmental Science Corporation

<sup>2</sup> TestAmerica

<sup>3</sup> Tennessee Dept. of Health Environmental Laboratories; this lab also reported isopropylbenzene (0.00117J mg/L), methyl cyclohexane (0.00103 mg/L), and methylene chloride (0.00137 mg/L) in the 7/1/08 sample and 1,1,1-trichloroethane (0.0006J mg/L), isopropylbenzene (0.00072J mg/L), methyl cyclohexane (0.00081 mg/L), and methylene chloride (0.00126 mg/L) in the 9/9/08 sample.

<sup>4</sup> Sample also contained isopropylbenzene at 0.00211 mg/L and p-isopropyltoluene at 0.00183 mg/L

<sup>5</sup> Sample also contained isopropylbenzene at 0.00128 mg/L

<sup>6</sup> Sample also contained isopropylbenzene at 0.00125 mg/l

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location LC-MS (Main Seep) Cont'd													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
2/6/09 <sup>7</sup>	0.815	96.0	0.00330	<0.0010	0.0366	<0.050	<0.010	0.00128	<0.0010	0.0102	NR	0.00325	0.122
04/24/09	70.300	183.0	0.00649	<0.0010	0.0757	<0.050	<0.010	0.00285	<0.0010	0.0197	NR	0.00591	0.291
6/3/09 <sup>8</sup>	<25.00	185.0	0.00503	<0.0010	0.0724	0.121	<0.010	0.00242	<0.0010	0.0160	NR	0.00516	<1.5
8/10/09 <sup>9</sup>	9.170	149.0	0.00256	<0.0010	0.0574	0.110	0.0264	0.00221	<0.0010	0.0146	NR	0.00487	0.191
10/22/09	<100.0 <sup>RL1</sup>	108.0	0.00354	<0.0010	0.0472	0.0703	0.0286	0.00165	<0.0010	0.0120	NR	0.00393	0.159
12/7/09 <sup>10</sup>	15.500	169.0	0.00431	<0.0010	0.0645	0.0703	<0.005	0.00194	<0.0010	0.0144	NR	0.00462	0.256
2/26/10 <sup>11</sup>	4.510	137.0	0.00312	<0.0010	0.0695	0.0926	<0.010	<0.0010	<0.0010	0.0138	NR	0.00448	0.277
4/16/10 <sup>12</sup>	1.44 <sup>E</sup>	150.0	0.00374	<0.0010	0.0944	<0.050	<0.010	0.00228	<0.0010	0.0157	NR	0.00510	0.369
6/18/10 <sup>13</sup>	0.220	131.0	0.00321	<0.0010	0.0706	<0.050	<0.010	0.00207	<0.0010	0.0148	NR	0.00456	0.269
7/27/10 <sup>14</sup>	0.0929	82.4	0.00194	<0.0005	0.0267	<0.025	<0.0050	0.00104	<0.0005	0.00751	NR	0.00234	0.0806
10/15/10 <sup>RL1</sup>	<25.00	196.0	<0.500	<0.500	<0.500	<25.00	<5.00	<0.500	<0.500	<0.500	NR	<0.500	<1.500
12/21/10 <sup>RL1</sup>	<25.00	78.40	<0.500	<0.500	<0.500	<25.00	<5.00	<0.500	<0.500	<0.500	NR	<0.500	<1.500
3/22/11 <sup>RL1</sup>	<25.00	88.90	<0.500	<0.500	<0.500	<25.00	<5.00	<0.500	<0.500	<0.500	NR	<0.500	<1.500
06/09/11 <sup>15</sup>	<0.050	236.0	0.00474	<0.0010	0.0964	<0.050	<0.010	0.00302	<0.0010	0.0207	NR	0.00641	0.311
9/13/11 <sup>RL1</sup>	<12.5	128.0	<0.250	<0.250	<0.250	<12.5	<2.50	<0.250	<0.250	<0.250	NR	<0.250	<0.750
12/13/11 <sup>RL1</sup>	<12.5	134.0	<0.250	<0.250	0.0765 <sup>16</sup>	<12.5	<2.50	<0.250	<0.250	<0.250	NR	<0.250	0.236 <sup>16</sup>
3/22/12 <sup>17</sup>	<0.050	142.0	0.00252	<0.0005	0.0938	<0.050	<0.010	0.00340	<0.0010	0.0215	NR	0.00634	0.292
7/17/12 <sup>RL1</sup>	<2.50	90.0	<0.050	<0.050	0.0663	<2.50	<0.500	<0.050	<0.050	<0.050	NR	<0.050	0.169
10/5/12 <sup>RL1</sup>	<2.50	72.7 <sup>18</sup>	<0.050	<0.050	0.0708	<2.50	<0.500	<0.050	<0.050	<0.050	NR	<0.050	0.176
12/13/12	<0.050	62.20	0.00116	<0.0010	0.0489	<0.050	<0.010	0.00134	<0.0010	0.00842	NR	0.00264	0.154
3/27/13 <sup>RL1</sup>	<2.50	96.20	<0.050	<0.050	0.0561	<2.50	<0.500	<0.050	<0.050	<0.050	NR	<0.050	0.188
9/18/13 <sup>RL1</sup>	<2.50	114.00	<0.500	<0.500	<0.500	<25.00	<2.500	<0.500	<0.500	<0.500	NR	<0.500	<1.000

**Bold text indicates a detected parameter**

Notes:

NR - Not Reported

<sup>7</sup> Sample also contained chloroform at 0.00330 mg/L

<sup>8</sup> Sample also contained isopropylbenzene at 0.00116 mg/L

<sup>9</sup> Sample also contained isopropylbenzene at 0.00116 mg/L

<sup>10</sup> Sample also contained isopropylbenzene at 0.00108 mg/L

<sup>11</sup> Sample also contained isopropylbenzene at 0.00191 and chloroform at 0.00108 mg/L

<sup>12</sup> Sample also contained isopropylbenzene at 0.00133 and chloroform at 0.00145 mg/L

<sup>13</sup> Sample also contained isopropylbenzene at 0.00190 mg/L

<sup>14</sup> Sample also contained isopropylbenzene at 0.000575 mg/L

<sup>15</sup> Sample also contained isopropylbenzene at 0.00191 mg/L

<sup>16</sup> Constituent detected in a re-analysis of the sample outside the required holding time. Result not verified.

<sup>17</sup> Sample also contained isopropylbenzene at 0.00196 mg/L

<sup>18</sup> This result is from resampling. A sample collected on September 6, 2012, contained toluene at a concentration of 0.0912 mg/L.

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>RL1</sup> Reporting limit raised due to sample matrix effects

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location HR-2 (Harpeth River 2)													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
05/18/07	<b>1,700<sup>E</sup></b>	<b>360<sup>E</sup></b>	<0.20	<0.20	<0.20	<2.0	<2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60
05/24/07	<b>1,800</b>	<b>400</b>	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<15
06/01/07	<b>3,700</b>	<b>450<sup>E</sup></b>	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
06/08/07	<b>1,900</b>	<b>470</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
07/09/07	<b>1,500</b>	<b>180<sup>V</sup></b>	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<15
08/08/07	<b>1,600</b>	<b>150</b>	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<15
09/19/07	<b>780</b>	<b>130</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
10/12/07	<b>890</b>	<b>250</b>	<2.5	<2.5	<2.5	<25	<25	<2.5	<2.5	<2.5	<2.5	<2.5	<7.5
11/09/07	<b>400</b>	<b>180</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
12/10/07	<b>620<sup>J6</sup></b>	<b>160<sup>J6</sup></b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
01/28/08	<b>330<sup>E</sup></b>	<b>84</b>	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
02/21/08	<b>460</b>	<b>170</b>	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.5
04/02/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
05/07/08	<b>390</b>	<b>140</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
06/10/08	<b>300</b>	<b>160</b>	<b>1.2</b>	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
06/18/08	<b>950</b>	<b>300</b>	<b>0.018</b>	<0.010	<b>0.14</b>	<b>3.5</b>	<b>1.7</b>	<0.010	<0.010	<b>0.023</b>	<0.010	<0.010	<b>0.55</b>
07/01/08 <sup>1</sup>	<b>640</b>	<b>200</b>	<0.10	<0.10	<b>0.10</b>	<b>1.8</b>	<b>1.0</b>	<0.10	<0.10	<0.10	<0.10	<0.10	<b>0.44</b>
07/01/08 <sup>2</sup>	<b>543</b>	<b>231</b>	<b>0.012</b>	<0.010	<b>0.120</b>	<b>3.060</b>	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<b>0.471</b>
07/01/08 <sup>3</sup>	<b>773</b>	<b>294</b>	<b>0.0113</b>	<0.00034	<b>0.0820</b>	<b>3.140</b>	<b>1.160</b>	<b>0.00413</b>	<0.00050	<b>0.0233</b>	NR	<b>0.00853</b>	<b>0.3677</b>
09/09/08 <sup>4</sup>	<b>852</b>	<b>230<sup>B1</sup></b>	<b>0.0117</b>	<0.0010	<b>0.106</b>	<b>4.590<sup>E</sup></b>	<0.010	<b>0.00291</b>	<0.0010	<b>0.0225</b>	NR	<b>0.00760</b>	<b>0.511<sup>E</sup></b>
09/09/08 <sup>5</sup>	<b>855</b>	<b>219</b>	<b>0.0120</b>	<0.0010	<b>0.0709</b>	<b>4.470</b>	<b>1.650</b>	<b>0.00272</b>	<b>0.540<sup>J</sup></b>	<b>0.0239</b>	<0.0010	<b>0.00710</b>	<b>0.323</b>
10/1/2008 <sup>6</sup>	<b>692</b>	<b>326</b>	<b>0.0162</b>	<0.0010	<b>0.123</b>	<50	<b>0.482</b>	<b>0.00271</b>	<0.0010	<b>0.0217</b>	NR	<b>0.00687</b>	<b>0.423</b>
10/10/08 <sup>6</sup>	<b>489</b>	<b>179</b>	<b>0.0116</b>	<0.0010	<b>0.0902</b>	<b>3.12<sup>E</sup></b>	<b>0.816</b>	<b>0.00249</b>	<0.0010	<b>0.0210</b>	NR	<b>0.00628</b>	<b>0.340</b>
11/13/08 <sup>7</sup>	<b>308</b>	<b>186</b>	<b>0.0110</b>	<0.0010	<b>0.0902</b>	<b>1.900<sup>E</sup></b>	<b>0.546</b>	<b>0.00316</b>	<0.0010	<b>0.0255</b>	NR	<b>0.00810</b>	<b>0.343</b>
12/23/08	<b>186</b>	<b>99</b>	<b>0.00622</b>	<0.0010	<b>0.0909</b>	<b>1.320</b>	<0.010	<b>0.00491</b>	<0.0010	<b>0.0229</b>	NR	<b>0.00723</b>	<b>0.380</b>

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level    NR - Not Reported

<sup>1</sup> Environmental Science Corporation

<sup>2</sup> TestAmerica

<sup>3</sup> Tennessee Dept. of Health Environmental Laboratories; this lab also reported 2-hexanone (0.00116J mg/L), isopropylbenzene (0.00216 mg/L), and methylene chloride (0.000720 mg/L) in the 7/1/08 sample, and 2-hexanone (0.0123 mg/L), carbon disulfide (0.00174 mg/L), isopropylbenzene (0.00145J mg/L), and methylene chloride (0.000830 mg/L) in the 9/9/08 sample.

<sup>4</sup> Sample also contained isopropylbenzene at 0.00289 mg/L and p-isopropyltoluene at 0.00190 mg/L.

<sup>5</sup> Sample also contained isopropylbenzene at 0.00132 mg/L

<sup>6</sup> Sample also contained isopropylbenzene at 0.00138 mg/L

<sup>7</sup> Sample also contained isopropylbenzene at 0.00158 mg/L

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>J</sup> Matrix interference, spike value is high (for TDEH lab results: estimated value)

<sup>V</sup> The sample concentration is too high to evaluate accurate spike recoveries.

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

<sup>J6</sup> Matrix Interference, spike value too low

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location HR-2 (Harpeth River 2) Cont'd													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloroethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethylbenzene	1,2,3-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
2/6/2009 <sup>8</sup>	<b>75.50</b>	<b>104</b>	<b>0.00481</b>	<0.0010	<b>0.0742</b>	<b>0.321</b>	<b>0.430</b>	<b>0.00233</b>	<0.0010	<b>0.0196</b>	NR	<b>0.00630</b>	<b>0.362</b>
04/24/09	<0.050	<b>30</b>	<b>0.00145</b>	<0.0010	<b>0.0234</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00879</b>	NR	<b>0.00283</b>	<b>0.114</b>
06/03/09	<0.050	<b>78.5</b>	<b>0.00277</b>	<0.0010	<b>0.0485</b>	<0.050	<0.010	<b>0.00202</b>	<0.0010	<b>0.0154</b>	NR	<b>0.00465</b>	<b>0.225</b>
8/10/09 <sup>9</sup>	<0.050	<b>90.8</b>	<b>0.00337</b>	<0.0010	<b>0.0599</b>	<0.050	<0.010	<b>0.00243</b>	<0.0010	<b>0.0174</b>	NR	<b>0.00559</b>	<b>0.234</b>
10/02/09	<0.050	<b>49.6</b>	<b>0.00322</b>	<0.0010	<b>0.0475</b>	<0.050	<0.010	<b>0.00188</b>	<0.0010	<b>0.0141</b>	NR	<b>0.00450</b>	<b>0.184</b>
12/07/09	<0.050	<b>43.6</b>	<b>0.00302</b>	<0.0010	<b>0.0521</b>	<0.050	<0.010	<b>0.00201</b>	<0.0010	<b>0.0152</b>	NR	<b>0.00475</b>	<b>0.213</b>
2/26/10 <sup>10</sup>	<0.050	<b>2.44</b>	<0.0010	<0.0010	<b>0.00931</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00307</b>	NR	<b>0.00114</b>	<b>0.0292</b>
04/16/10	<0.050	<b>0.0638</b>	<0.0010	<0.0010	<b>0.00311</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00569</b>
06/18/10	<0.050	<b>2.35</b>	<b>0.00156</b>	<0.0010	<b>0.0206</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00343</b>	NR	<b>0.00117</b>	<b>0.0932</b>
07/27/10	<0.050	<b>0.427</b>	<0.0010	<0.0010	<b>0.0205</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00339</b>	NR	<b>0.00113</b>	<b>0.0827</b>
10/15/10	<0.050	<b>0.918</b>	<b>0.00411</b>	<0.0010	<b>0.0457</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00687</b>	NR	<b>0.00198</b>	<b>0.175</b>
12/21/10	<0.050	<b>1.520</b>	<b>0.00143</b>	<0.0010	<b>0.0124</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00360</b>	NR	<b>0.00109</b>	<b>0.0464</b>
03/22/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
06/09/11	<0.050	<b>0.00585</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
09/13/11	<0.025	<b>0.00369</b>	<b>0.000890</b>	<0.0010	<b>0.00271</b>	<0.025	<0.0050	<0.0005	<0.0005	<b>0.00160</b>	NR	<0.0005	<b>0.00507</b>
12/13/11 <sup>11</sup>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level NR - Not Reported

<sup>8</sup> Sample also contained isopropylbenzene at 0.00133 mg/L

<sup>9</sup> Sample also contained isopropylbenzene at 0.00112 mg/L

<sup>10</sup> Sample also contained isopropylbenzene at 0.00100 mg/L

<sup>11</sup> Location no longer sampled as approved by TDSWM

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location Watergate (Upstream of Main Seep)													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
11/09/07	<0.50	<b>11</b>	<0.050	<0.050	<0.050	<0.50	<0.50	<0.050	<b>0.053</b>	<0.050	<0.050	<0.050	<0.15
12/10/07	<1.2	<b>4.2</b>	<0.025	<0.025	<0.025	<0.25	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075
01/28/08	<b>0.52</b>	<b>2.6</b>	<0.10	<0.10	<0.10	<1.0	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30
02/15/08	<1.0	<b>4.3<sup>E</sup></b>	<0.020	<0.020	<0.020	<0.20	<0.20	<0.020	<0.020	<0.020	<0.020	<0.020	<0.060
04/02/08	<b>3.0<sup>E</sup></b>	<b>7.0</b>	<0.0010	<0.0010	<b>0.0016</b>	<0.010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<b>0.0069</b>
05/07/08	<0.5	<b>3.0<sup>E</sup></b>	<0.010	<0.010	<0.010	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030
06/03/08	<b>0.12</b>	<b>5.9</b>	<0.0010	<0.0010	<b>0.0018</b>	<0.010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<b>0.0068</b>
07/01/08 <sup>1</sup>	<50	<b>180</b>	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
07/01/08 <sup>2</sup>	<b>0.642</b>	<b>15.1</b>	<0.005	<0.005	<0.005	<0.250	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.015
07/01/08 <sup>3</sup>	<b>0.568</b>	<b>18.8</b>	<b>0.00080</b>	<0.00034	<b>0.00564</b>	<0.0075	<0.00068	<0.00023	<0.00050	<b>0.00260</b>	NR	<b>0.00188</b>	<b>0.02008</b>
09/09/08 <sup>4</sup>	<b>0.0986</b>	<b>13.5<sup>B1</sup></b>	<0.0010	<0.0010	<b>0.00202</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00183</b>	NR	<0.0010	<b>0.00893</b>
10/01/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/10/08	<2.5 <sup>RL1</sup>	<b>17.90</b>	<0.0010	<0.0010	<b>0.00698</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00196</b>	NR	<0.0010	<b>0.0229</b>
11/13/08	<0.050	<b>15.80</b>	<0.0010	<0.0010	<b>0.00508</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00160</b>	NR	<0.0010	<b>0.0174</b>
12/23/08	<0.050	<b>2.750</b>	<0.0010	<0.0010	<b>0.00105</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00327</b>

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level    NR - Not Reported

<sup>1</sup> Environmental Science Corporation

<sup>2</sup> TestAmerica

<sup>3</sup> Tennessee Dept. of Health Environmental Laboratories

<sup>4</sup> Sample also contained isopropylbenzene at 0.00151 mg/L and p-isopropyltoluene at 0.00177 mg/L

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>J</sup> Matrix interference, spike value is high

<sup>V</sup> The sample concentration is too high to evaluate accurate spike recoveries.

<sup>J6</sup> Matrix Interference, spike value too low

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

<sup>RL1</sup> Reporting limit raised due to matrix effects.

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location Watergate (Upstream of Main Seep) Cont'd													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloroethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethylbenzene	1,2,3-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
02/06/09	<0.050	<b>2.750</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00312</b>
04/24/09	<b>2.540</b>	<b>5.370</b>	<0.0010	<0.0010	<b>0.00205</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00926</b>
06/03/09	<b>1.180</b>	<b>12.200</b>	<0.0010	<0.0010	<b>0.00518</b>	<0.050	<0.010	<0.0010	<0.0010	<b>0.00122</b>	NR	<0.0010	<b>0.0177</b>
08/10/09	<b>0.187</b>	<b>4.550</b>	<0.0010	<0.0010	<b>0.00153</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00603</b>
10/22/09	<0.050	<b>3.270</b>	<0.0010	<0.0010	<b>0.00124</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00480</b>
12/07/09	<b>0.933</b>	<b>7.400</b>	<0.0010	<0.0010	<b>0.00339</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.0138</b>
02/26/10	<b>0.136</b>	<b>2.530</b>	<0.0010	<0.0010	<b>0.00111</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00432</b>
4/16/10 <sup>5</sup>	<b>0.0582</b>	<b>3.540</b>	<0.0010	<0.0010	<b>0.00240</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00982</b>
6/18/10 <sup>6</sup>	<0.050	<b>2.600</b>	<0.0010	<0.0010	<b>0.00112</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00422</b>
07/27/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/15/10 <sup>RL1</sup>	<1.000	<b>9.820</b>	<0.0200	<0.0200	<0.0200	<1.000	<0.200	<0.0200	<0.0200	<0.0200	NR	<0.0200	<0.0600
12/21/10 <sup>RL1</sup>	<1.000	<b>1.790</b>	<0.0100	<0.0100	<0.0100	<0.500	<0.100	<0.0100	<0.0100	<0.0100	NR	<0.0100	<0.0300
3/22/11 <sup>RL1</sup>	<0.500	<b>1.780</b>	<0.0100	<0.0100	<0.0100	<0.500	<0.100	<0.0100	<0.0100	<0.0100	NR	<0.0100	<0.0300
6/9/2011 <sup>7</sup>	<0.050	<b>1.610<sup>B1</sup></b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
9/13/11 <sup>RL1, 8</sup>	<0.625	<b>3.630</b>	<0.00250	<0.00250	<b>0.00255</b>	<0.125	<0.025	<0.00250	<0.00250	<0.00250	NR	<0.00250	<b>0.00890</b>
12/13/11 <sup>RL1</sup>	<0.500	<b>1.610</b>	<0.0100	<0.0100	<0.0100	<0.500	<0.100	<0.0100	<0.0100	<0.0100	NR	<0.0100	<0.0300
03/22/12	<0.050	<b>1.760</b>	<0.0010	<0.0010	<b>0.00114</b>	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<b>0.00499</b>
7/17/12 <sup>RL1</sup>	<0.250	<b>1.710</b>	<0.0050	<0.0050	<0.0050	<0.250	<0.050	<0.0050	<0.0050	<0.0050	NR	<0.0050	<0.0150
10/5/12 <sup>RL1</sup>	<0.250	<b>2.020</b>	<0.0050	<0.0050	<0.0050	<0.250	<0.050	<0.0050	<0.0050	<0.0050	NR	<0.0050	<0.0150
12/13/12	<b>0.143</b>	<b>0.591</b>	<0.0100	<0.0100	<0.0100	<0.500	<0.100	<0.0100	<0.0100	<0.0100	NR	<0.0100	<0.0300
03/27/13	<0.250	<b>0.705</b>	<0.0050	<0.0050	<0.0050	<0.250	<0.050	<0.0050	<0.0050	<0.0050	NR	<0.0050	<0.0150
9/18/13 <sup>RL1</sup>	<0.050	<b>1.950</b>	<0.010	<0.010	<0.010	<0.500	<0.050	<0.010	<0.010	<0.010	NR	<0.010	<0.020

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level    NR - Not Reported

<sup>5</sup> Sample also contained chloroform at 0.00109 mg/L

<sup>6</sup> Sample also contained chloroform at 0.00141 mg/L

<sup>7</sup> Sample also contained chloroform at 0.00483 mg/L

<sup>8</sup> Sample also contained chloroform at 0.00270 mg/L

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>J</sup> Matrix interference, spike value is high

<sup>V</sup> The sample concentration is too high to evaluate accurate spike recoveries.

<sup>J6</sup> Matrix Interference, spike value too low

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

<sup>RL1</sup> Reporting limit raised due to matrix effects.

**Table 1: Summary of Analytical Results Continued**  
**Liberty Creek and Harpeth River Seeps**  
**Results in mg/L**

Sampling Location HR-DS-LC (Harpeth River Downstream of Liberty Creek)													
Date	Acetone	Toluene	Benzene	cis-1,2-Dichloro-ethene	Ethyl-benzene	Methyl Ethyl Ketone (MEK)	Methyl Isobutyl Ketone (MIBK)	n-Propyl-benzene	Tetra-chloro-ethene (PCE)	1,2,4-Trimethyl-benzene	1,2,3-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes
11/13/08	<0.050	<b>0.0505</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
12/23/08	<0.050	<b>0.00851</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
02/06/09	<0.050	<b>0.0249</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
04/24/09	<b>0.0678</b>	<b>0.0288</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
06/03/09	<0.050	<b>0.0260</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
08/10/09	<0.050	<b>0.0252</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
10/22/09	<0.050	<b>0.0130</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
12/07/09	<0.050	<b>0.00806</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
02/26/10	<0.050	<b>0.0116</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
04/16/10	<0.050	<b>0.0119</b>	<0.0010	<0.0010	<0.0010	<0.050	<0.010	<0.0010	<0.0010	<0.0010	NR	<0.0010	<0.0030
6/18/10 <sup>1</sup>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**Bold text indicates a detected parameter**

Notes:

NS - Location not sampled, dry or below river level    NR - Not Reported

Laboratory qualifiers:

<sup>E</sup> Estimated result. Sample concentration exceeds the calibration range.

<sup>J</sup> Matrix interference, spike value is high

<sup>V</sup> The sample concentration is too high to evaluate accurate spike recoveries.

<sup>J6</sup> Matrix Interference, spike value too low

<sup>B1</sup> Analyte detected in method blank at less than 1/10 the concentration in the sample

<sup>RL1</sup> Reporting limit raised due to matrix effects.

<sup>1</sup> Location no longer sampled as approved by TDSWM

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-35845-1

Client Project/Site: ELMCO - 07 -ELMO1-01

For:

Triad Environmental Consultants

207 Donelson Pike

Nashville, Tennessee 37214

Attn: Mr. Chris Scott

Heather Baker

Authorized for release by:

10/2/2013 11:57:26 AM

Heather Baker, Project Manager I

(615)301-5043

[heather.baker@testamericainc.com](mailto:heather.baker@testamericainc.com)

### LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page .....	1
Table of Contents .....	2
Sample Summary .....	3
Case Narrative .....	4
Definitions .....	5
Client Sample Results .....	6
QC Sample Results .....	14
QC Association .....	19
Chronicle .....	20
Method Summary .....	21
Certification Summary .....	22
Chain of Custody .....	23
Receipt Checklists .....	25

## Sample Summary

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-35845-1	LC-PC	Water	09/18/13 15:00	09/20/13 08:30
490-35845-2	LC-MS	Water	09/18/13 15:45	09/20/13 08:30
490-35845-3	Watergate	Water	09/18/13 15:15	09/20/13 08:30
490-35845-4	Trip Blank	Water	09/18/13 00:01	09/20/13 08:30

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TestAmerica Nashville

## Case Narrative

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

### Job ID: 490-35845-1

Laboratory: TestAmerica Nashville

#### Narrative

##### Job Narrative 490-35845-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/20/2013 3:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

#### GC/MS VOA

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 110755.

Method(s) 8260B: The following sample(s) was diluted due to the nature of the sample matrix: LC-MS (490-35845-2), LC-PC (490-35845-1), Watergate (490-35845-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The method blank for preparation batch 110755 contained 123-Trichlorobenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No other analytical or quality issues were noted.

#### VOA Prep

No analytical or quality issues were noted.

## Definitions/Glossary

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Client Sample ID: LC-PC

Date Collected: 09/18/13 15:00  
Date Received: 09/20/13 08:30

## Lab Sample ID: 490-35845-1

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,1,1-Trichloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,1,2,2-Tetrachloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,1,2-Trichloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,1-Dichloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,1-Dichloroethene	ND		20.0		ug/L		09/30/13 18:51		20
1,1-Dichloropropene	ND		20.0		ug/L		09/30/13 18:51		20
1,2,3-Trichlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,2,3-Trichloropropane	ND		20.0		ug/L		09/30/13 18:51		20
1,2,4-Trichlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,2,4-Trimethylbenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,2-Dibromo-3-Chloropropane	ND		200		ug/L		09/30/13 18:51		20
1,2-Dibromoethane (EDB)	ND		20.0		ug/L		09/30/13 18:51		20
1,2-Dichlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,2-Dichloroethane	ND		20.0		ug/L		09/30/13 18:51		20
1,2-Dichloropropene	ND		20.0		ug/L		09/30/13 18:51		20
1,3,5-Trimethylbenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,3-Dichlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
1,3-Dichloropropane	ND		20.0		ug/L		09/30/13 18:51		20
1,4-Dichlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
2,2-Dichloropropane	ND		20.0		ug/L		09/30/13 18:51		20
2-Butanone (MEK)	ND		1000		ug/L		09/30/13 18:51		20
2-Chlorotoluene	ND		20.0		ug/L		09/30/13 18:51		20
2-Hexanone	ND		100		ug/L		09/30/13 18:51		20
4-Chlorotoluene	ND		20.0		ug/L		09/30/13 18:51		20
4-Methyl-2-pentanone (MIBK)	ND		100		ug/L		09/30/13 18:51		20
Acetone	ND		100		ug/L		09/30/13 18:51		20
Benzene	ND		20.0		ug/L		09/30/13 18:51		20
Bromobenzene	ND		20.0		ug/L		09/30/13 18:51		20
Bromochloromethane	ND		20.0		ug/L		09/30/13 18:51		20
Bromodichloromethane	ND		20.0		ug/L		09/30/13 18:51		20
Bromoform	ND		20.0		ug/L		09/30/13 18:51		20
Bromomethane	ND		20.0		ug/L		09/30/13 18:51		20
Carbon disulfide	ND		20.0		ug/L		09/30/13 18:51		20
Carbon tetrachloride	ND		20.0		ug/L		09/30/13 18:51		20
Chlorobenzene	ND		20.0		ug/L		09/30/13 18:51		20
Chlorodibromomethane	ND		20.0		ug/L		09/30/13 18:51		20
Chloroethane	ND		20.0		ug/L		09/30/13 18:51		20
Chloroform	ND		20.0		ug/L		09/30/13 18:51		20
Chloromethane	ND		20.0		ug/L		09/30/13 18:51		20
cis-1,2-Dichloroethene	ND		20.0		ug/L		09/30/13 18:51		20
cis-1,3-Dichloropropene	ND		20.0		ug/L		09/30/13 18:51		20
Dibromomethane	ND		20.0		ug/L		09/30/13 18:51		20
Dichlorodifluoromethane	ND		20.0		ug/L		09/30/13 18:51		20
Ethylbenzene	ND		20.0		ug/L		09/30/13 18:51		20
Hexachlorobutadiene	ND		40.0		ug/L		09/30/13 18:51		20
Isopropylbenzene	ND		20.0		ug/L		09/30/13 18:51		20
Methyl tert-butyl ether	ND		20.0		ug/L		09/30/13 18:51		20
Methylene Chloride	ND		100		ug/L		09/30/13 18:51		20

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

**Client Sample ID: LC-PC**  
**Date Collected: 09/18/13 15:00**  
**Date Received: 09/20/13 08:30**

**Lab Sample ID: 490-35845-1**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		100		ug/L			09/30/13 18:51	20
n-Butylbenzene	ND		20.0		ug/L			09/30/13 18:51	20
N-Propylbenzene	ND		20.0		ug/L			09/30/13 18:51	20
p-Isopropyltoluene	ND		20.0		ug/L			09/30/13 18:51	20
sec-Butylbenzene	ND		20.0		ug/L			09/30/13 18:51	20
Styrene	ND		20.0		ug/L			09/30/13 18:51	20
tert-Butylbenzene	ND		20.0		ug/L			09/30/13 18:51	20
Tetrachloroethene	ND		20.0		ug/L			09/30/13 18:51	20
<b>Toluene</b>	<b>4010</b>		20.0		ug/L			09/30/13 18:51	20
trans-1,2-Dichloroethene	ND		20.0		ug/L			09/30/13 18:51	20
trans-1,3-Dichloropropene	ND		20.0		ug/L			09/30/13 18:51	20
Trichloroethene	ND		20.0		ug/L			09/30/13 18:51	20
Trichlorofluoromethane	ND		20.0		ug/L			09/30/13 18:51	20
Vinyl chloride	ND		20.0		ug/L			09/30/13 18:51	20
Xylenes, Total	ND		40.0		ug/L			09/30/13 18:51	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 130					09/30/13 18:51	20
4-Bromofluorobenzene (Surr)	110		70 - 130					09/30/13 18:51	20
Dibromofluoromethane (Surr)	88		70 - 130					09/30/13 18:51	20
Toluene-d8 (Surr)	97		70 - 130					09/30/13 18:51	20

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Client Sample ID: LC-MS

Date Collected: 09/18/13 15:45  
Date Received: 09/20/13 08:30

## Lab Sample ID: 490-35845-2

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		500		ug/L			09/30/13 19:19	500
1,1,1-Trichloroethane	ND		500		ug/L			09/30/13 19:19	500
1,1,2,2-Tetrachloroethane	ND		500		ug/L			09/30/13 19:19	500
1,1,2-Trichloroethane	ND		500		ug/L			09/30/13 19:19	500
1,1-Dichloroethane	ND		500		ug/L			09/30/13 19:19	500
1,1-Dichloroethene	ND		500		ug/L			09/30/13 19:19	500
1,1-Dichloropropene	ND		500		ug/L			09/30/13 19:19	500
1,2,3-Trichlorobenzene	ND		500		ug/L			09/30/13 19:19	500
1,2,3-Trichloropropane	ND		500		ug/L			09/30/13 19:19	500
1,2,4-Trichlorobenzene	ND		500		ug/L			09/30/13 19:19	500
1,2,4-Trimethylbenzene	ND		500		ug/L			09/30/13 19:19	500
1,2-Dibromo-3-Chloropropane	ND		5000		ug/L			09/30/13 19:19	500
1,2-Dibromoethane (EDB)	ND		500		ug/L			09/30/13 19:19	500
1,2-Dichlorobenzene	ND		500		ug/L			09/30/13 19:19	500
1,2-Dichloroethane	ND		500		ug/L			09/30/13 19:19	500
1,2-Dichloropropane	ND		500		ug/L			09/30/13 19:19	500
1,3,5-Trimethylbenzene	ND		500		ug/L			09/30/13 19:19	500
1,3-Dichlorobenzene	ND		500		ug/L			09/30/13 19:19	500
1,3-Dichloropropane	ND		500		ug/L			09/30/13 19:19	500
1,4-Dichlorobenzene	ND		500		ug/L			09/30/13 19:19	500
2,2-Dichloropropane	ND		500		ug/L			09/30/13 19:19	500
2-Butanone (MEK)	ND		25000		ug/L			09/30/13 19:19	500
2-Chlorotoluene	ND		500		ug/L			09/30/13 19:19	500
2-Hexanone	ND		2500		ug/L			09/30/13 19:19	500
4-Chlorotoluene	ND		500		ug/L			09/30/13 19:19	500
4-Methyl-2-pentanone (MIBK)	ND		2500		ug/L			09/30/13 19:19	500
Acetone	ND		2500		ug/L			09/30/13 19:19	500
Benzene	ND		500		ug/L			09/30/13 19:19	500
Bromobenzene	ND		500		ug/L			09/30/13 19:19	500
Bromochloromethane	ND		500		ug/L			09/30/13 19:19	500
Bromodichloromethane	ND		500		ug/L			09/30/13 19:19	500
Bromoform	ND		500		ug/L			09/30/13 19:19	500
Bromomethane	ND		500		ug/L			09/30/13 19:19	500
Carbon disulfide	ND		500		ug/L			09/30/13 19:19	500
Carbon tetrachloride	ND		500		ug/L			09/30/13 19:19	500
Chlorobenzene	ND		500		ug/L			09/30/13 19:19	500
Chlorodibromomethane	ND		500		ug/L			09/30/13 19:19	500
Chloroethane	ND		500		ug/L			09/30/13 19:19	500
Chloroform	ND		500		ug/L			09/30/13 19:19	500
Chloromethane	ND		500		ug/L			09/30/13 19:19	500
cis-1,2-Dichloroethene	ND		500		ug/L			09/30/13 19:19	500
cis-1,3-Dichloropropene	ND		500		ug/L			09/30/13 19:19	500
Dibromomethane	ND		500		ug/L			09/30/13 19:19	500
Dichlorodifluoromethane	ND		500		ug/L			09/30/13 19:19	500
Ethylbenzene	ND		500		ug/L			09/30/13 19:19	500
Hexachlorobutadiene	ND		1000		ug/L			09/30/13 19:19	500
Isopropylbenzene	ND		500		ug/L			09/30/13 19:19	500
Methyl tert-butyl ether	ND		500		ug/L			09/30/13 19:19	500
Methylene Chloride	ND		2500		ug/L			09/30/13 19:19	500

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

**Client Sample ID: LC-MS**  
**Date Collected: 09/18/13 15:45**  
**Date Received: 09/20/13 08:30**

**Lab Sample ID: 490-35845-2**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		2500		ug/L			09/30/13 19:19	500
n-Butylbenzene	ND		500		ug/L			09/30/13 19:19	500
N-Propylbenzene	ND		500		ug/L			09/30/13 19:19	500
p-Isopropyltoluene	ND		500		ug/L			09/30/13 19:19	500
sec-Butylbenzene	ND		500		ug/L			09/30/13 19:19	500
Styrene	ND		500		ug/L			09/30/13 19:19	500
tert-Butylbenzene	ND		500		ug/L			09/30/13 19:19	500
Tetrachloroethene	ND		500		ug/L			09/30/13 19:19	500
<b>Toluene</b>	<b>114000</b>			500	ug/L			09/30/13 19:19	500
trans-1,2-Dichloroethene	ND		500		ug/L			09/30/13 19:19	500
trans-1,3-Dichloropropene	ND		500		ug/L			09/30/13 19:19	500
Trichloroethene	ND		500		ug/L			09/30/13 19:19	500
Trichlorofluoromethane	ND		500		ug/L			09/30/13 19:19	500
Vinyl chloride	ND		500		ug/L			09/30/13 19:19	500
Xylenes, Total	ND		1000		ug/L			09/30/13 19:19	500
<hr/>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 130					09/30/13 19:19	500
4-Bromofluorobenzene (Surr)	110		70 - 130					09/30/13 19:19	500
Dibromofluoromethane (Surr)	89		70 - 130					09/30/13 19:19	500
Toluene-d8 (Surr)	95		70 - 130					09/30/13 19:19	500

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Client Sample ID: Watergate

Date Collected: 09/18/13 15:15

Date Received: 09/20/13 08:30

## Lab Sample ID: 490-35845-3

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,1,1-Trichloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,1,2,2-Tetrachloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,1,2-Trichloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,1-Dichloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,1-Dichloroethene	ND		10.0		ug/L			09/30/13 19:46	10
1,1-Dichloropropene	ND		10.0		ug/L			09/30/13 19:46	10
1,2,3-Trichlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,2,3-Trichloropropane	ND		10.0		ug/L			09/30/13 19:46	10
1,2,4-Trichlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,2,4-Trimethylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,2-Dibromo-3-Chloropropane	ND		100		ug/L			09/30/13 19:46	10
1,2-Dibromoethane (EDB)	ND		10.0		ug/L			09/30/13 19:46	10
1,2-Dichlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,2-Dichloroethane	ND		10.0		ug/L			09/30/13 19:46	10
1,2-Dichloropropane	ND		10.0		ug/L			09/30/13 19:46	10
1,3,5-Trimethylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,3-Dichlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
1,3-Dichloropropane	ND		10.0		ug/L			09/30/13 19:46	10
1,4-Dichlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
2,2-Dichloropropane	ND		10.0		ug/L			09/30/13 19:46	10
2-Butanone (MEK)	ND		500		ug/L			09/30/13 19:46	10
2-Chlorotoluene	ND		10.0		ug/L			09/30/13 19:46	10
2-Hexanone	ND		50.0		ug/L			09/30/13 19:46	10
4-Chlorotoluene	ND		10.0		ug/L			09/30/13 19:46	10
4-Methyl-2-pentanone (MIBK)	ND		50.0		ug/L			09/30/13 19:46	10
Acetone	ND		50.0		ug/L			09/30/13 19:46	10
Benzene	ND		10.0		ug/L			09/30/13 19:46	10
Bromobenzene	ND		10.0		ug/L			09/30/13 19:46	10
Bromochloromethane	ND		10.0		ug/L			09/30/13 19:46	10
Bromodichloromethane	ND		10.0		ug/L			09/30/13 19:46	10
Bromoform	ND		10.0		ug/L			09/30/13 19:46	10
Bromomethane	ND		10.0		ug/L			09/30/13 19:46	10
Carbon disulfide	ND		10.0		ug/L			09/30/13 19:46	10
Carbon tetrachloride	ND		10.0		ug/L			09/30/13 19:46	10
Chlorobenzene	ND		10.0		ug/L			09/30/13 19:46	10
Chlorodibromomethane	ND		10.0		ug/L			09/30/13 19:46	10
Chloroethane	ND		10.0		ug/L			09/30/13 19:46	10
Chloroform	ND		10.0		ug/L			09/30/13 19:46	10
Chloromethane	ND		10.0		ug/L			09/30/13 19:46	10
cis-1,2-Dichloroethene	ND		10.0		ug/L			09/30/13 19:46	10
cis-1,3-Dichloropropene	ND		10.0		ug/L			09/30/13 19:46	10
Dibromomethane	ND		10.0		ug/L			09/30/13 19:46	10
Dichlorodifluoromethane	ND		10.0		ug/L			09/30/13 19:46	10
Ethylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
Hexachlorobutadiene	ND		20.0		ug/L			09/30/13 19:46	10
Isopropylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
Methyl tert-butyl ether	ND		10.0		ug/L			09/30/13 19:46	10
Methylene Chloride	ND		50.0		ug/L			09/30/13 19:46	10

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

**Client Sample ID: Watergate**  
**Date Collected: 09/18/13 15:15**  
**Date Received: 09/20/13 08:30**

**Lab Sample ID: 490-35845-3**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		50.0		ug/L			09/30/13 19:46	10
n-Butylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
N-Propylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
p-Isopropyltoluene	ND		10.0		ug/L			09/30/13 19:46	10
sec-Butylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
Styrene	ND		10.0		ug/L			09/30/13 19:46	10
tert-Butylbenzene	ND		10.0		ug/L			09/30/13 19:46	10
Tetrachloroethene	ND		10.0		ug/L			09/30/13 19:46	10
<b>Toluene</b>	<b>1950</b>		10.0		ug/L			09/30/13 19:46	10
trans-1,2-Dichloroethene	ND		10.0		ug/L			09/30/13 19:46	10
trans-1,3-Dichloropropene	ND		10.0		ug/L			09/30/13 19:46	10
Trichloroethene	ND		10.0		ug/L			09/30/13 19:46	10
Trichlorofluoromethane	ND		10.0		ug/L			09/30/13 19:46	10
Vinyl chloride	ND		10.0		ug/L			09/30/13 19:46	10
Xylenes, Total	ND		20.0		ug/L			09/30/13 19:46	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 130					09/30/13 19:46	10
4-Bromofluorobenzene (Surr)	108		70 - 130					09/30/13 19:46	10
Dibromofluoromethane (Surr)	89		70 - 130					09/30/13 19:46	10
Toluene-d8 (Surr)	96		70 - 130					09/30/13 19:46	10

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Client Sample ID: Trip Blank

Date Collected: 09/18/13 00:01

Date Received: 09/20/13 08:30

## Lab Sample ID: 490-35845-4

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,1,1-Trichloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,1,2-Trichloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,1-Dichloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,1-Dichloroethene	ND		1.00		ug/L		09/30/13 15:30		1
1,1-Dichloropropene	ND		1.00		ug/L		09/30/13 15:30		1
1,2,3-Trichlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,2,3-Trichloropropane	ND		1.00		ug/L		09/30/13 15:30		1
1,2,4-Trichlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,2,4-Trimethylbenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L		09/30/13 15:30		1
1,2-Dibromoethane (EDB)	ND		1.00		ug/L		09/30/13 15:30		1
1,2-Dichlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,2-Dichloroethane	ND		1.00		ug/L		09/30/13 15:30		1
1,2-Dichloropropane	ND		1.00		ug/L		09/30/13 15:30		1
1,3,5-Trimethylbenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,3-Dichlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
1,3-Dichloropropane	ND		1.00		ug/L		09/30/13 15:30		1
1,4-Dichlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
2,2-Dichloropropane	ND		1.00		ug/L		09/30/13 15:30		1
2-Butanone (MEK)	ND		50.0		ug/L		09/30/13 15:30		1
2-Chlorotoluene	ND		1.00		ug/L		09/30/13 15:30		1
2-Hexanone	ND		5.00		ug/L		09/30/13 15:30		1
4-Chlorotoluene	ND		1.00		ug/L		09/30/13 15:30		1
4-Methyl-2-pentanone (MIBK)	ND		5.00		ug/L		09/30/13 15:30		1
Acetone	ND		5.00		ug/L		09/30/13 15:30		1
Benzene	ND		1.00		ug/L		09/30/13 15:30		1
Bromobenzene	ND		1.00		ug/L		09/30/13 15:30		1
Bromochloromethane	ND		1.00		ug/L		09/30/13 15:30		1
Bromodichloromethane	ND		1.00		ug/L		09/30/13 15:30		1
Bromoform	ND		1.00		ug/L		09/30/13 15:30		1
Bromomethane	ND		1.00		ug/L		09/30/13 15:30		1
Carbon disulfide	ND		1.00		ug/L		09/30/13 15:30		1
Carbon tetrachloride	ND		1.00		ug/L		09/30/13 15:30		1
Chlorobenzene	ND		1.00		ug/L		09/30/13 15:30		1
Chlorodibromomethane	ND		1.00		ug/L		09/30/13 15:30		1
Chloroethane	ND		1.00		ug/L		09/30/13 15:30		1
Chloroform	ND		1.00		ug/L		09/30/13 15:30		1
Chloromethane	ND		1.00		ug/L		09/30/13 15:30		1
cis-1,2-Dichloroethene	ND		1.00		ug/L		09/30/13 15:30		1
cis-1,3-Dichloropropene	ND		1.00		ug/L		09/30/13 15:30		1
Dibromomethane	ND		1.00		ug/L		09/30/13 15:30		1
Dichlorodifluoromethane	ND		1.00		ug/L		09/30/13 15:30		1
Ethylbenzene	ND		1.00		ug/L		09/30/13 15:30		1
Hexachlorobutadiene	ND		2.00		ug/L		09/30/13 15:30		1
Isopropylbenzene	ND		1.00		ug/L		09/30/13 15:30		1
Methyl tert-butyl ether	ND		1.00		ug/L		09/30/13 15:30		1
Methylene Chloride	ND		5.00		ug/L		09/30/13 15:30		1

TestAmerica Nashville

# Client Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

**Client Sample ID: Trip Blank**  
**Date Collected: 09/18/13 00:01**  
**Date Received: 09/20/13 08:30**

**Lab Sample ID: 490-35845-4**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		5.00		ug/L			09/30/13 15:30	1
n-Butylbenzene	ND		1.00		ug/L			09/30/13 15:30	1
N-Propylbenzene	ND		1.00		ug/L			09/30/13 15:30	1
p-Isopropyltoluene	ND		1.00		ug/L			09/30/13 15:30	1
sec-Butylbenzene	ND		1.00		ug/L			09/30/13 15:30	1
Styrene	ND		1.00		ug/L			09/30/13 15:30	1
tert-Butylbenzene	ND		1.00		ug/L			09/30/13 15:30	1
Tetrachloroethene	ND		1.00		ug/L			09/30/13 15:30	1
Toluene	ND		1.00		ug/L			09/30/13 15:30	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			09/30/13 15:30	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			09/30/13 15:30	1
Trichloroethene	ND		1.00		ug/L			09/30/13 15:30	1
Trichlorofluoromethane	ND		1.00		ug/L			09/30/13 15:30	1
Vinyl chloride	ND		1.00		ug/L			09/30/13 15:30	1
Xylenes, Total	ND		2.00		ug/L			09/30/13 15:30	1
<hr/>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 130					09/30/13 15:30	1
4-Bromofluorobenzene (Surr)	111		70 - 130					09/30/13 15:30	1
Dibromofluoromethane (Surr)	90		70 - 130					09/30/13 15:30	1
Toluene-d8 (Surr)	96		70 - 130					09/30/13 15:30	1

TestAmerica Nashville

# QC Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-110755/7**

**Matrix: Water**

**Analysis Batch: 110755**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,1,1-Trichloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,1,2-Trichloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,1-Dichloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,1-Dichloroethene	ND		1.00		ug/L			09/30/13 13:30	1
1,1-Dichloropropene	ND		1.00		ug/L			09/30/13 13:30	1
1,2,3-Trichlorobenzene	1.260		1.00		ug/L			09/30/13 13:30	1
1,2,3-Trichloropropane	ND		1.00		ug/L			09/30/13 13:30	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			09/30/13 13:30	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			09/30/13 13:30	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L			09/30/13 13:30	1
1,2-Dibromoethane (EDB)	ND		1.00		ug/L			09/30/13 13:30	1
1,2-Dichlorobenzene	ND		1.00		ug/L			09/30/13 13:30	1
1,2-Dichloroethane	ND		1.00		ug/L			09/30/13 13:30	1
1,2-Dichloropropane	ND		1.00		ug/L			09/30/13 13:30	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			09/30/13 13:30	1
1,3-Dichlorobenzene	ND		1.00		ug/L			09/30/13 13:30	1
1,3-Dichloropropane	ND		1.00		ug/L			09/30/13 13:30	1
1,4-Dichlorobenzene	ND		1.00		ug/L			09/30/13 13:30	1
2,2-Dichloropropane	ND		1.00		ug/L			09/30/13 13:30	1
2-Butanone (MEK)	ND		50.0		ug/L			09/30/13 13:30	1
2-Chlorotoluene	ND		1.00		ug/L			09/30/13 13:30	1
2-Hexanone	ND		5.00		ug/L			09/30/13 13:30	1
4-Chlorotoluene	ND		1.00		ug/L			09/30/13 13:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.00		ug/L			09/30/13 13:30	1
Acetone	ND		5.00		ug/L			09/30/13 13:30	1
Benzene	ND		1.00		ug/L			09/30/13 13:30	1
Bromobenzene	ND		1.00		ug/L			09/30/13 13:30	1
Bromochloromethane	ND		1.00		ug/L			09/30/13 13:30	1
Bromodichloromethane	ND		1.00		ug/L			09/30/13 13:30	1
Bromoform	ND		1.00		ug/L			09/30/13 13:30	1
Bromomethane	ND		1.00		ug/L			09/30/13 13:30	1
Carbon disulfide	ND		1.00		ug/L			09/30/13 13:30	1
Carbon tetrachloride	ND		1.00		ug/L			09/30/13 13:30	1
Chlorobenzene	ND		1.00		ug/L			09/30/13 13:30	1
Chlorodibromomethane	ND		1.00		ug/L			09/30/13 13:30	1
Chloroethane	ND		1.00		ug/L			09/30/13 13:30	1
Chloroform	ND		1.00		ug/L			09/30/13 13:30	1
Chloromethane	ND		1.00		ug/L			09/30/13 13:30	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			09/30/13 13:30	1
cis-1,3-Dichloropropene	ND		1.00		ug/L			09/30/13 13:30	1
Dibromomethane	ND		1.00		ug/L			09/30/13 13:30	1
Dichlorodifluoromethane	ND		1.00		ug/L			09/30/13 13:30	1
Ethylbenzene	ND		1.00		ug/L			09/30/13 13:30	1
Hexachlorobutadiene	ND		2.00		ug/L			09/30/13 13:30	1
Isopropylbenzene	ND		1.00		ug/L			09/30/13 13:30	1
Methyl tert-butyl ether	ND		1.00		ug/L			09/30/13 13:30	1

TestAmerica Nashville

# QC Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-110755/7**

**Matrix: Water**

**Analysis Batch: 110755**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Methylene Chloride	ND				5.00		ug/L			09/30/13 13:30	1
Naphthalene	ND				5.00		ug/L			09/30/13 13:30	1
n-Butylbenzene	ND				1.00		ug/L			09/30/13 13:30	1
N-Propylbenzene	ND				1.00		ug/L			09/30/13 13:30	1
p-Isopropyltoluene	ND				1.00		ug/L			09/30/13 13:30	1
sec-Butylbenzene	ND				1.00		ug/L			09/30/13 13:30	1
Styrene	ND				1.00		ug/L			09/30/13 13:30	1
tert-Butylbenzene	ND				1.00		ug/L			09/30/13 13:30	1
Tetrachloroethene	ND				1.00		ug/L			09/30/13 13:30	1
Toluene	ND				1.00		ug/L			09/30/13 13:30	1
trans-1,2-Dichloroethene	ND				1.00		ug/L			09/30/13 13:30	1
trans-1,3-Dichloropropene	ND				1.00		ug/L			09/30/13 13:30	1
Trichloroethene	ND				1.00		ug/L			09/30/13 13:30	1
Trichlorofluoromethane	ND				1.00		ug/L			09/30/13 13:30	1
Vinyl chloride	ND				1.00		ug/L			09/30/13 13:30	1
Xylenes, Total	ND				2.00		ug/L			09/30/13 13:30	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dichloroethane-d4 (Surr)	87		87		70 - 130			09/30/13 13:30	1
4-Bromofluorobenzene (Surr)	110		110		70 - 130			09/30/13 13:30	1
Dibromofluoromethane (Surr)	89		89		70 - 130			09/30/13 13:30	1
Toluene-d8 (Surr)	95		95		70 - 130			09/30/13 13:30	1

**Lab Sample ID: LCS 490-110755/3**

**Matrix: Water**

**Analysis Batch: 110755**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	MB	LCS	LCS	Unit	D	%Rec	Limits	%Rec.
		Result	Qualifier	Unit					
1,1,1,2-Tetrachloroethane	50.0	49.60		ug/L		99	74 - 135		
1,1,1-Trichloroethane	50.0	51.40		ug/L		103	78 - 135		
1,1,2,2-Tetrachloroethane	50.0	61.05		ug/L		122	69 - 131		
1,1,2-Trichloroethane	50.0	54.53		ug/L		109	80 - 124		
1,1-Dichloroethane	50.0	54.09		ug/L		108	78 - 125		
1,1-Dichloroethene	50.0	60.03		ug/L		120	79 - 124		
1,1-Dichloropropene	50.0	51.16		ug/L		102	80 - 122		
1,2,3-Trichlorobenzene	50.0	42.94		ug/L		86	62 - 133		
1,2,3-Trichloropropane	50.0	52.49		ug/L		105	70 - 131		
1,2,4-Trichlorobenzene	50.0	43.50		ug/L		87	63 - 133		
1,2,4-Trimethylbenzene	50.0	53.77		ug/L		108	77 - 126		
1,2-Dibromo-3-Chloropropane	50.0	48.88		ug/L		98	54 - 125		
1,2-Dibromoethane (EDB)	50.0	53.25		ug/L		107	80 - 129		
1,2-Dichlorobenzene	50.0	50.08		ug/L		100	80 - 121		
1,2-Dichloroethane	50.0	44.41		ug/L		89	77 - 121		
1,2-Dichloropropane	50.0	52.09		ug/L		104	75 - 120		
1,3,5-Trimethylbenzene	50.0	54.63		ug/L		109	77 - 127		
1,3-Dichlorobenzene	50.0	51.25		ug/L		102	80 - 122		
1,3-Dichloropropane	50.0	50.94		ug/L		102	80 - 125		
1,4-Dichlorobenzene	50.0	51.07		ug/L		102	80 - 120		

TestAmerica Nashville

# QC Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-110755/3**

**Matrix: Water**

**Analysis Batch: 110755**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
2,2-Dichloropropane	50.0	52.00		ug/L		104	43 - 161
2-Butanone (MEK)	250	293.8		ug/L		118	62 - 133
2-Chlorotoluene	50.0	53.71		ug/L		107	75 - 126
2-Hexanone	250	280.8		ug/L		112	60 - 142
4-Chlorotoluene	50.0	53.53		ug/L		107	75 - 130
4-Methyl-2-pentanone (MIBK)	250	288.9		ug/L		116	60 - 137
Acetone	250	298.9		ug/L		120	54 - 145
Benzene	50.0	54.17		ug/L		108	80 - 121
Bromobenzene	50.0	57.02		ug/L		114	68 - 130
Bromoform	50.0	48.17		ug/L		96	78 - 129
Bromodichloromethane	50.0	53.72		ug/L		107	75 - 129
Bromoform	50.0	46.00		ug/L		92	46 - 145
Bromomethane	50.0	46.92		ug/L		94	41 - 150
Carbon disulfide	50.0	58.51		ug/L		117	77 - 126
Carbon tetrachloride	50.0	49.71		ug/L		99	64 - 147
Chlorobenzene	50.0	50.45		ug/L		101	80 - 120
Chlorodibromomethane	50.0	54.63		ug/L		109	69 - 133
Chloroethane	50.0	56.49		ug/L		113	72 - 120
Chloroform	50.0	47.64		ug/L		95	73 - 129
Chloromethane	50.0	55.77		ug/L		112	12 - 150
cis-1,2-Dichloroethene	50.0	49.89		ug/L		100	76 - 125
cis-1,3-Dichloropropene	50.0	55.87		ug/L		112	74 - 140
Dibromomethane	50.0	51.75		ug/L		103	71 - 125
Dichlorodifluoromethane	50.0	51.58		ug/L		103	37 - 127
Ethylbenzene	50.0	52.12		ug/L		104	80 - 130
Hexachlorobutadiene	50.0	45.60		ug/L		91	49 - 146
Isopropylbenzene	50.0	53.34		ug/L		107	80 - 141
Methyl tert-butyl ether	50.0	51.02		ug/L		102	72 - 133
Methylene Chloride	50.0	56.14		ug/L		112	79 - 123
Naphthalene	50.0	51.30		ug/L		103	62 - 138
n-Butylbenzene	50.0	52.82		ug/L		106	68 - 132
N-Propylbenzene	50.0	54.92		ug/L		110	75 - 129
p-Isopropyltoluene	50.0	53.76		ug/L		108	75 - 128
sec-Butylbenzene	50.0	55.18		ug/L		110	76 - 128
Styrene	50.0	55.69		ug/L		111	80 - 127
tert-Butylbenzene	50.0	48.90		ug/L		98	76 - 126
Tetrachloroethene	50.0	43.87		ug/L		88	80 - 126
Toluene	50.0	54.58		ug/L		109	80 - 126
trans-1,2-Dichloroethene	50.0	52.85		ug/L		106	79 - 126
trans-1,3-Dichloropropene	50.0	54.49		ug/L		109	63 - 134
Trichloroethene	50.0	48.96		ug/L		98	80 - 123
Trichlorofluoromethane	50.0	47.70		ug/L		95	65 - 124
Vinyl chloride	50.0	58.87		ug/L		118	68 - 120
Xylenes, Total	100	108.5		ug/L		109	80 - 132

Surrogate	LCS	LCS	
	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 130
4-Bromofluorobenzene (Surr)	110		70 - 130

TestAmerica Nashville

# QC Sample Results

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-110755/3**

**Matrix: Water**

**Analysis Batch: 110755**

Surrogate	LCS	LCS	
	%Recovery	Qualifier	Limits
Dibromofluoromethane (Sur)	92		70 - 130
Toluene-d8 (Sur)	98		70 - 130

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Lab Sample ID: LCSD 490-110755/4**

**Matrix: Water**

**Analysis Batch: 110755**

Analyte		Spike	LCSD	LCSD	Unit	D	%Rec	Limits	%Rec.	RPD	RPD	Limit
		Added	Result	Qualifier								
1,1,1,2-Tetrachloroethane		50.0	50.37		ug/L		101	74 - 135	2	16		10
1,1,1-Trichloroethane		50.0	50.62		ug/L		101	78 - 135	2	17		11
1,1,2,2-Tetrachloroethane		50.0	62.58		ug/L		125	69 - 131	2	20		12
1,1,2-Trichloroethane		50.0	55.23		ug/L		110	80 - 124	1	15		13
1,1-Dichloroethane		50.0	54.60		ug/L		109	78 - 125	1	17		14
1,1-Dichloroethene		50.0	58.26		ug/L		117	79 - 124	3	17		15
1,1-Dichloropropene		50.0	51.13		ug/L		102	80 - 122	0	17		16
1,2,3-Trichlorobenzene		50.0	45.63		ug/L		91	62 - 133	6	25		17
1,2,3-Trichloropropane		50.0	53.71		ug/L		107	70 - 131	2	19		18
1,2,4-Trichlorobenzene		50.0	46.29		ug/L		93	63 - 133	6	19		19
1,2,4-Trimethylbenzene		50.0	55.00		ug/L		110	77 - 126	2	16		20
1,2-Dibromo-3-Chloropropane		50.0	51.27		ug/L		103	54 - 125	5	24		21
1,2-Dibromoethane (EDB)		50.0	54.22		ug/L		108	80 - 129	2	15		22
1,2-Dichlorobenzene		50.0	51.77		ug/L		104	80 - 121	3	15		23
1,2-Dichloroethane		50.0	45.05		ug/L		90	77 - 121	1	17		24
1,2-Dichloropropene		50.0	52.21		ug/L		104	75 - 120	0	17		25
1,3,5-Trimethylbenzene		50.0	55.90		ug/L		112	77 - 127	2	17		26
1,3-Dichlorobenzene		50.0	53.12		ug/L		106	80 - 122	4	15		27
1,3-Dichloropropane		50.0	51.32		ug/L		103	80 - 125	1	14		28
1,4-Dichlorobenzene		50.0	52.33		ug/L		105	80 - 120	2	15		29
2,2-Dichloropropane		50.0	49.88		ug/L		100	43 - 161	4	18		30
2-Butanone (MEK)		250	295.4		ug/L		118	62 - 133	1	19		31
2-Chlorotoluene		50.0	55.16		ug/L		110	75 - 126	3	17		32
2-Hexanone		250	286.3		ug/L		115	60 - 142	2	15		33
4-Chlorotoluene		50.0	54.50		ug/L		109	75 - 130	2	18		34
4-Methyl-2-pentanone (MIBK)		250	287.5		ug/L		115	60 - 137	1	17		35
Acetone		250	307.4		ug/L		123	54 - 145	3	21		36
Benzene		50.0	53.83		ug/L		108	80 - 121	1	17		37
Bromobenzene		50.0	58.46		ug/L		117	68 - 130	2	20		38
Bromochloromethane		50.0	49.05		ug/L		98	78 - 129	2	17		39
Bromodichloromethane		50.0	54.13		ug/L		108	75 - 129	1	18		40
Bromoform		50.0	46.71		ug/L		93	46 - 145	2	16		41
Bromomethane		50.0	46.79		ug/L		94	41 - 150	0	50		42
Carbon disulfide		50.0	56.66		ug/L		113	77 - 126	3	21		43
Carbon tetrachloride		50.0	47.99		ug/L		96	64 - 147	4	19		44
Chlorobenzene		50.0	50.51		ug/L		101	80 - 120	0	14		45
Chlorodibromomethane		50.0	55.27		ug/L		111	69 - 133	1	15		46
Chloroethane		50.0	56.20		ug/L		112	72 - 120	1	20		47
Chloroform		50.0	47.14		ug/L		94	73 - 129	1	18		48
Chloromethane		50.0	54.27		ug/L		109	12 - 150	3	31		49

TestAmerica Nashville

# QC Sample Results

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-110755/4**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

**Analysis Batch: 110755**

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD Limit
	Added	Result	Qualifier						
cis-1,2-Dichloroethene	50.0	49.72		ug/L	99	76 - 125		0	17
cis-1,3-Dichloropropene	50.0	56.35		ug/L	113	74 - 140		1	15
Dibromomethane	50.0	52.19		ug/L	104	71 - 125		1	16
Dichlorodifluoromethane	50.0	51.87		ug/L	104	37 - 127		1	18
Ethylbenzene	50.0	52.41		ug/L	105	80 - 130		1	15
Hexachlorobutadiene	50.0	48.03		ug/L	96	49 - 146		5	23
Isopropylbenzene	50.0	53.04		ug/L	106	80 - 141		1	16
Methyl tert-butyl ether	50.0	51.99		ug/L	104	72 - 133		2	16
Methylene Chloride	50.0	57.19		ug/L	114	79 - 123		2	17
Naphthalene	50.0	54.15		ug/L	108	62 - 138		5	26
n-Butylbenzene	50.0	53.95		ug/L	108	68 - 132		2	18
N-Propylbenzene	50.0	55.47		ug/L	111	75 - 129		1	17
p-Isopropyltoluene	50.0	55.04		ug/L	110	75 - 128		2	16
sec-Butylbenzene	50.0	56.03		ug/L	112	76 - 128		2	16
Styrene	50.0	56.08		ug/L	112	80 - 127		1	24
tert-Butylbenzene	50.0	49.94		ug/L	100	76 - 126		2	16
Tetrachloroethene	50.0	43.21		ug/L	86	80 - 126		2	16
Toluene	50.0	54.34		ug/L	109	80 - 126		0	15
trans-1,2-Dichloroethene	50.0	52.29		ug/L	105	79 - 126		1	16
trans-1,3-Dichloropropene	50.0	55.43		ug/L	111	63 - 134		2	14
Trichloroethene	50.0	49.07		ug/L	98	80 - 123		0	17
Trichlorofluoromethane	50.0	47.95		ug/L	96	65 - 124		1	18
Vinyl chloride	50.0	57.85		ug/L	116	68 - 120		2	17
Xylenes, Total	100	108.7		ug/L	109	80 - 132		0	15

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	83		70 - 130
4-Bromofluorobenzene (Surr)	111		70 - 130
Dibromofluoromethane (Surr)	91		70 - 130
Toluene-d8 (Surr)	96		70 - 130

TestAmerica Nashville

# QC Association Summary

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

## GC/MS VOA

Analysis Batch: 110755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-35845-1	LC-PC	Total/NA	Water	8260B	5
490-35845-2	LC-MS	Total/NA	Water	8260B	6
490-35845-3	Watergate	Total/NA	Water	8260B	7
490-35845-4	Trip Blank	Total/NA	Water	8260B	8
LCS 490-110755/3	Lab Control Sample	Total/NA	Water	8260B	9
LCSD 490-110755/4	Lab Control Sample Dup	Total/NA	Water	8260B	10
MB 490-110755/7	Method Blank	Total/NA	Water	8260B	11

## Lab Chronicle

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

### Client Sample ID: LC-PC

Date Collected: 09/18/13 15:00  
Date Received: 09/20/13 08:30

Lab Sample ID: 490-35845-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	110755	09/30/13 18:51	MJH	TAL NSH

### Client Sample ID: LC-MS

Date Collected: 09/18/13 15:45  
Date Received: 09/20/13 08:30

Lab Sample ID: 490-35845-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	110755	09/30/13 19:19	MJH	TAL NSH

### Client Sample ID: Watergate

Date Collected: 09/18/13 15:15  
Date Received: 09/20/13 08:30

Lab Sample ID: 490-35845-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	110755	09/30/13 19:46	MJH	TAL NSH

### Client Sample ID: Trip Blank

Date Collected: 09/18/13 00:01  
Date Received: 09/20/13 08:30

Lab Sample ID: 490-35845-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	110755	09/30/13 15:30	MJH	TAL NSH

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TestAmerica Nashville

## Method Summary

Client: Triad Environmental Consultants  
Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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## Certification Summary

Client: Triad Environmental Consultants  
 Project/Site: ELMCO - 07 -ELMO1-01

TestAmerica Job ID: 490-35845-1

### Laboratory: TestAmerica Nashville

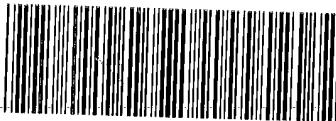
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

\* Expired certification is currently pending renewal and is considered valid.

TestAmerica Nashville

## COOLER RECEIPT FORM



490-35845 Chain of Custody

Cooler Received/Opened On: 9-20-13 @ 15:501. Tracking # 8street (last 4 digits, FedEx)Courier: 6street IR Gun ID: 147404562. Temperature of rep. sample or temp blank when opened: 3.9 Degrees Celsius3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES  NO  NA4. Were custody seals on outside of cooler?  YES  NO  NA

If yes, how many and where: \_\_\_\_\_

5. Were the seals intact, signed, and dated correctly? YES  NO  NA6. Were custody papers inside cooler? YES  NO  NAI certify that I opened the cooler and answered questions 1-6 (initial) ECA7. Were custody seals on containers: YES  NO  and Intact YES  NO  NAWere these signed and dated correctly? YES  NO  NA8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None10. Did all containers arrive in good condition (unbroken)? YES  NO  NA11. Were all container labels complete (#, date, signed, pres., etc)? YES  NO  NA12. Did all container labels and tags agree with custody papers? YES  NO  NA13a. Were VOA vials received? YES  NO  NAb. Was there any observable headspace present in any VOA vial? YES  NO  NA14. Was there a Trip Blank in this cooler? YES  NO  NA If multiple coolers, sequence # NAI certify that I unloaded the cooler and answered questions 7-14 (initial) ECA15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES  NO  NAb. Did the bottle labels indicate that the correct preservatives were used YES  NO  NA16. Was residual chlorine present? YES  NO  NAI certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ECA17. Were custody papers properly filled out (ink, signed, etc)? YES  NO  NA18. Did you sign the custody papers in the appropriate place? YES  NO  NA19. Were correct containers used for the analysis requested? YES  NO  NA20. Was sufficient amount of sample sent in each container? YES  NO  NAI certify that I entered this project into LIMS and answered questions 17-20 (initial) ECAI certify that I attached a label with the unique LIMS number to each container (initial) ECA21. Were there Non-Conformance issues at login? YES  NO Was a NCM generated? YES  NO  # \_\_\_\_\_

## Chain of Custody Record

**TestAmerica**

2960 Foster Creighton Drive  
Nashville, TN 37204  
Phone (615) 726-0177 Fax (615) 726-3404

## Login Sample Receipt Checklist

Client: Triad Environmental Consultants

Job Number: 490-35845-1

**Login Number: 35845**

**List Source: TestAmerica Nashville**

**List Number: 1**

**Creator: Abernathy, Eric**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	